

CLAIMS

What is claimed is:

- 1 1. A method for configuring a network device, the method comprising the machine-
2 implemented steps of:
3 configuring a network to include the network device in a private virtual local area
4 network (VLAN);
5 supplying first boot data to the network device over the network, wherein processing
6 of the first boot data by the network device during a first startup of the
7 network device causes the network device to execute a provisioning process
8 over the network;
9 instructing the provisioning process to supply one or more computer programs to the
10 network device over the network;
11 re-configuring the network to remove the network device from the private VLAN;
12 and
13 supplying second boot data to the network device over the network, wherein
14 processing of the second boot data by the network device during a second
15 startup of the network device causes the network device to execute at least one
16 of the one or more computer programs.
- 1 2. A machine-readable medium for configuring a network device, the machine-readable
2 medium carrying instructions which, when executed by one or more processors, cause
3 the one or more processors to perform the steps of:
4 configuring a network to include the network device in a private virtual local area
5 network (VLAN);

6 supplying first boot data to the network device over the network, wherein processing
7 of the first boot data by the network device during a first startup of the
8 network device causes the network device to execute a provisioning process
9 over the network;
10 instructing the provisioning process to supply one or more computer programs to the
11 network device over the network;
12 re-configuring the network to remove the network device from the private VLAN;
13 and
14 supplying second boot data to the network device over the network, wherein
15 processing of the second boot data by the network device during a second
16 startup of the network device causes the network device to execute at least one
17 of the one or more computer programs.

1 3. An apparatus for configuring a network device, the apparatus comprising a memory
2 storing instructions which, when executed by one or more processors, cause the one
3 or more processors to perform the steps of:
4 configuring a network to include the network device in a private virtual local area
5 network (VLAN);
6 supplying first boot data to the network device over the network, wherein processing
7 of the first boot data by the network device during a first startup of the
8 network device causes the network device to execute a provisioning process
9 over the network;
10 instructing the provisioning process to supply one or more computer programs to the
11 network device over the network;

12 re-configuring the network to remove the network device from the private VLAN;
13 and
14 supplying second boot data to the network device over the network, wherein
15 processing of the second boot data by the network device during a second
16 startup of the network device causes the network device to execute at least one
17 of the one or more computer programs.

1 4. A method for configuring a network device in a network, the method comprising the
2 machine-implemented steps of:

3 supplying first boot data to the network device over the network, wherein processing
4 of the first boot data by the network device during a first startup of the
5 network device causes the network device to execute a provisioning process
6 over the network;

7 instructing the provisioning process to supply image data to the network device over
8 the network, wherein the image data includes one or more computer
9 programs; and

10 supplying second boot data to the network device over the network, wherein
11 processing of the second boot data by the network device during a second
12 startup of the network device causes the network device to execute at least one
13 of the one or more computer programs contained in the image data.

1 5. The method as recited in Claim 4, further comprising the machine-implemented steps
2 of:

3 prior to supplying the first boot data to the network device over the network,
4 configuring the network to include the network device in a private virtual

5 local area network (VLAN); and
6 after supplying the first boot data to the network device over the network and before
7 supplying the second boot data to the network device over the network, re-
8 configuring the network to remove the network device from the private
9 VLAN.

1 6. The method as recited in Claim 4, wherein the steps of supplying the first boot data to
2 the network device over the network and supplying the second boot data to the
3 network device over the network are performed using dynamic host configuration
4 protocol (DHCP).

1 7. The method as recited in Claim 4, wherein the first boot data is supplied to the
2 network device over the network in a payload portion of a dynamic host configuration
3 protocol (DHCP) reply generated and sent to the network device in response to
4 receiving a DHCP request from the network device over the network.

1 8. The method as recited in Claim 4, wherein the first boot data is a first boot loader
2 script and the second boot data is a second boot loader script.

1 9. The method as recited in Claim 4, wherein the one or more computer programs
2 include an operating system.

1 10. The method as recited in Claim 4, further comprising the machine-implemented step
2 of selecting the image data to be supplied to the network device based upon
3 provisioning criteria.

1 11. The method as recited in Claim 4, further comprising the machine-implemented steps
2 of:
3 supplying, over the network, the first boot data to a second network device that is

4 different than the network device, wherein processing of the first boot data by
5 the second device during a first startup of the second network device causes
6 the second network device to execute the provisioning process over the
7 network;
8 instructing the provisioning process to supply second image data to the second
9 network device, wherein the second image data is different than the first
10 image data and includes one or more other computer programs; and
11 supplying the second boot data to the second network device, wherein processing of
12 the second boot data by the second network device during a second startup of
13 the second network device causes the second network device to execute at
14 least one of the one or more other computer programs contained in the second
15 image data.

- 1 12. The method as recited in Claim 4, wherein the step of instructing the provisioning
2 process to supply image data to the network device over the network includes
3 instructing the provisioning process to cause the image data to be retrieved from an
4 image data repository and supplied to the network device over the network.
- 1 13. A machine-readable medium for configuring a network device in a network, the
2 machine-readable medium carrying instructions which, when executed by one or
3 more processors, cause the one or more processors to perform the steps of:
4 supplying first boot data to the network device over the network, wherein processing
5 of the first boot data by the network device during a first startup of the
6 network device causes the network device to execute a provisioning process
7 over the network;

8 instructing the provisioning process to supply image data to the network device over
9 the network, wherein the image data includes one or more computer
10 programs; and
11 supplying second boot data to the network device over the network, wherein
12 processing of the second boot data by the network device during a second
13 startup of the network device causes the network device to execute at least one
14 of the one or more computer programs contained in the image data.

1 14. The machine-readable medium as recited in Claim 13, further comprising one or
2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the steps of:
4 prior to supplying the first boot data to the network device over the network,
5 configuring the network to include the network device in a private virtual
6 local area network (VLAN); and
7 after supplying the first boot data to the network device over the network and before
8 supplying the second boot data to the network device over the network; re-
9 configuring the network to remove the network device from the private
10 VLAN.

1 15. The machine-readable medium as recited in Claim 13, wherein the steps of supplying
2 the first boot data to the network device over the network and supplying the second
3 boot data to the network device over the network are performed using dynamic host
4 configuration protocol (DHCP).

1 16. The machine-readable medium as recited in Claim 13, wherein the first boot data is
2 supplied to the network device over the network in a payload portion of a dynamic

3 host configuration protocol (DHCP) reply generated and sent to the network device in
4 response to receiving a DHCP request from the network device over the network.

1 17. The machine-readable medium as recited in Claim 13, wherein the first boot data is a
2 first boot loader script and the second boot data is a second boot loader script.

1 18. The machine-readable medium as recited in Claim 13, wherein the one or more
2 computer programs include an operating system.

1 19. The machine-readable medium as recited in Claim 13, further comprising one or
2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the step of selecting the image data to be
4 supplied to the network device based upon provisioning criteria.

1 20. The machine-readable medium as recited in Claim 13, further comprising one or
2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the steps of:
4 supplying, over the network, the first boot data to a second network device that is
5 different than the network device, wherein processing of the first boot data by
6 the second device during a first startup of the second network device causes
7 the second network device to execute the provisioning process over the
8 network;

9 instructing the provisioning process to supply second image data to the second
10 network device, wherein the second image data is different than the first
11 image data and includes one or more other computer programs; and
12 supplying the second boot data to the second network device, wherein processing of
13 the second boot data by the second network device during a second startup of

14 the second network device causes the second network device to execute at
15 least one of the one or more other computer programs contained in the second
16 image data.

1 21. The machine-readable medium as recited in Claim 13, wherein the step of instructing
2 the provisioning process to supply image data to the network device over the network
3 includes instructing the provisioning process to cause the image data to be retrieved
4 from an image data repository and supplied to the network device over the network.

1 22. An apparatus for configuring a network device in a network, the apparatus
2 comprising a memory storing instructions which, when executed by one or more
3 processors, cause the one or more processors to perform the steps of:
4 supplying first boot data to the network device over the network, wherein processing
5 of the first boot data by the network device during a first startup of the
6 network device causes the network device to execute a provisioning process
7 over the network;

8 instructing the provisioning process to supply image data to the network device over
9 the network, wherein the image data includes one or more computer
10 programs; and

11 supplying second boot data to the network device over the network, wherein
12 processing of the second boot data by the network device during a second
13 startup of the network device causes the network device to execute at least one
14 of the one or more computer programs contained in the image data.

- 1 23. The apparatus as recited in Claim 22, wherein the memory further comprises one or
2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the steps of:
4 prior to supplying the first boot data to the network device over the network,
5 configuring the network to include the network device in a private virtual
6 local area network (VLAN); and
7 after supplying the first boot data to the network device over the network and before
8 supplying the second boot data to the network device over the network, re-
9 configuring the network to remove the network device from the private
10 VLAN.
- 1 24. The apparatus as recited in Claim 22, wherein the steps of supplying the first boot
2 data to the network device over the network and supplying the second boot data to the
3 network device over the network are performed using dynamic host configuration
4 protocol (DHCP).
- 1 25. The apparatus as recited in Claim 22, wherein the first boot data is supplied to the
2 network device over the network in a payload portion of a dynamic host configuration
3 protocol (DHCP) reply generated and sent to the network device in response to
4 receiving a DHCP request from the network device over the network.
- 1 26. The apparatus as recited in Claim 22, wherein the first boot data is a first boot loader
2 script and the second boot data is a second boot loader script.
- 1 27. The apparatus as recited in Claim 22, wherein the one or more computer programs
2 include an operating system.
- 1 28. The apparatus as recited in Claim 22, wherein the memory further comprises one or

2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the step of selecting the image data to be
4 supplied to the network device based upon provisioning criteria.

1 29. The apparatus as recited in Claim 22, wherein the memory further comprises one or
2 more additional instructions which, when executed by the one or more processors,
3 cause the one or more processors to perform the steps of:

4 supplying, over the network, the first boot data to a second network device that is
5 different than the network device, wherein processing of the first boot data by
6 the second device during a first startup of the second network device causes
7 the second network device to execute the provisioning process over the
8 network;

9 instructing the provisioning process to supply second image data to the second
10 network device, wherein the second image data is different than the first
11 image data and includes one or more other computer programs; and
12 supplying the second boot data to the second network device, wherein processing of
13 the second boot data by the second network device during a second startup of
14 the second network device causes the second network device to execute at
15 least one of the one or more other computer programs contained in the second
16 image data.

1 30. The apparatus as recited in Claim 22, wherein the step of instructing the provisioning
2 process to supply image data to the network device over the network includes
3 instructing the provisioning process to cause the image data to be retrieved from an
4 image data repository and supplied to the network device over the network.